Kramer Electronics, Ltd.

USER MANUAL

Models:

WP-561 ***HDMI Line Transmitter***

WP-562 ***HDMI Line Receiver***

PT-561 ***HDMI Line Transmitter***

PT-562 ***HDMI Line Receiver***

Contents

1	**Introduction**	**1**
2	**Getting Started**	**1**
2.1	Quick Start	2
3	**Overview**	**2**
3.1	WP-561/PT-561 HDMI Line Transmitter	3
3.2	WP-562/PT-562 HDMI Line Receiver	4
3.3	About the Power Connect™ Feature	4
3.4	Using Twisted Pair Cable	4
3.5	About HDMI	5
3.6	Achieving the Best Performance	6
4	**Your WP-561, WP-562 HDMI Transmitter/Receiver Pair**	**6**
4.1	Your WP-561 HDMI Line Transmitter	7
4.2	Your WP-562 HDMI Line Receiver	9
5	**Connecting the WP-561/WP-562 Transmitter/Receiver Pair**	**11**
6	**Your PT-561, PT-562 HDMI Transmitter/Receiver Pair**	**12**
6.1	Your PT-561 HDMI Line Transmitter	12
6.2	Your PT-562 HDMI Line Receiver	13
7	**Connecting the PT-561 and PT-562**	**14**
7.1	Wiring the CAT 5 LINE IN/LINE OUT RJ-45 Connectors	16
7.2	Connecting an IR Receiver and Emitter	16
8	**Technical Specifications**	**17**

Figures

Figure 1: WP-561 HDMI Line Transmitter Belgian/German Model Functions 7
Figure 2: WP-561 HDMI Line Transmitter UK/European Model Functions 7
Figure 3: WP-561 HDMI Line Transmitter US Model Functions 8
Figure 4: WP-562 HDMI Line Receiver Belgian/German Model Functions 9
Figure 5: WP-562 HDMI Line Receiver UK/European Model Functions 9
Figure 6: WP-562 HDMI Line Receiver US Model Functions 10
Figure 7: PT-561 HDMI Line Transmitter 12
Figure 8: PT-562 HDMI Line Receiver 13
Figure 9: Connecting the PT-561/PT-562 HDMI Line Transmitter/Receiver 15
Figure 10: CAT 5 PINOUT 16

Tables

Table 1: WP-561 HDMI Line Transmitter Model Functions 8
Table 2: WP-562 HDMI Line Receiver Functions 10
Table 3: PT-561 HDMI Line Transmitter Features 12
Table 4: PT-562 HDMI Line Receiver Features 13
Table 5: CAT 5 PINOUT 16
Table 6: Technical Specifications 17

1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 1,000-plus different models now appear in 11 groups[1] that are clearly defined by function.

Thank you for purchasing the Kramer Pico TOOLS™ **PT-561** *HDMI Line Transmitter*, **PT-562** *HDMI Line Receiver*, Kramer Wall Plates **WP-561** *HDMI Line Transmitter*, and the **WP-562** *HDMI Line Receiver*, which are ideal for:

- Board, conference, and training rooms
- Presentation systems
- Signal distribution and home theater

Each package includes the following items:

- **PT-561** *HDMI Line Transmitter* or **WP-561** *HDMI Line Transmitter* or **PT-562** *HDMI Line Receiver* or **WP-562** *HDMI Line Receiver*
- This user manual[2]
- Power adapter (5V DC input) for the **PT-561**/**WP-561**

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high-performance high-resolution cables[3]

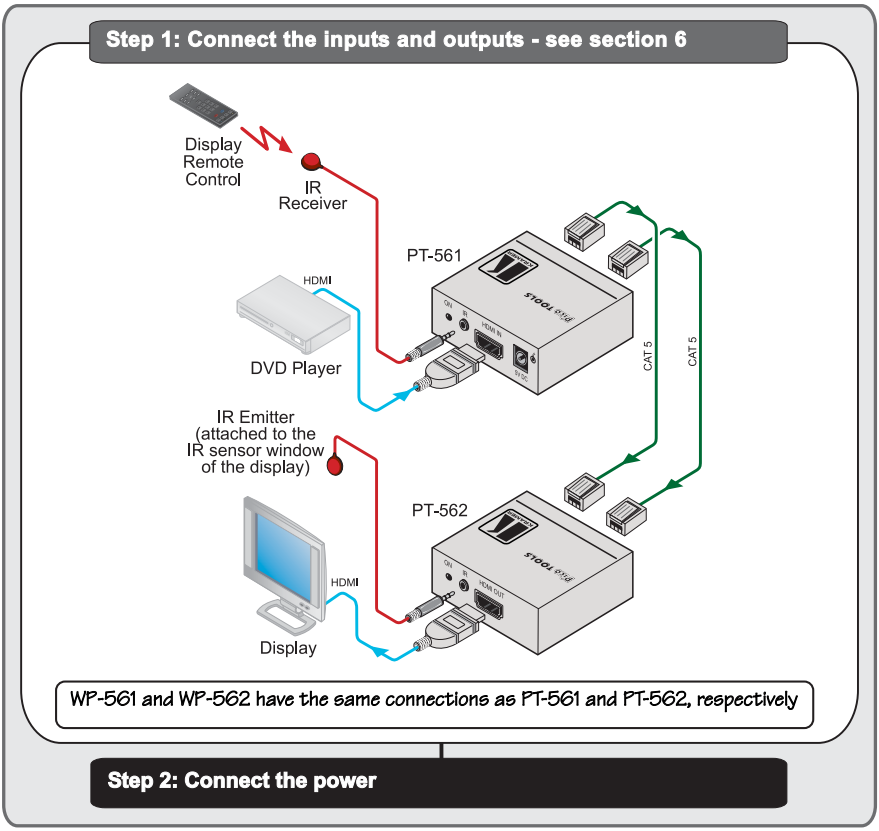
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 Download up-to-date Kramer user manuals from our Web site at http://www.kramerelectronics.com

3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com

2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.



3 Overview

This section summarizes:

- The **WP-561**/**PT-561** *HDMI Line Transmitter*, see section 3.1
- The **WP-562**/**PT-562** *HDMI Line Receiver*, see section 3.2
- The power connect feature, see section 3.3
- Using twisted pair cabling, see section 3.4; about HDMI, see section 3.5
- Recommendations for achieving the best performance, see section 3.6

The **WP-561** (or **PT-561**) *HDMI Line Transmitter* together with the **WP-562** (or **PT-562**) *HDMI Line Receiver* constitutes an HDMI and IR signal twisted pair transmitter and receiver system using two STP cables.

The transmission range between the HDMI source and the HDMI acceptor can be extended up to:

- 90m (295ft) at 1080i, or up to 30m (98ft) at 1080p on shielded **BC-DGKat524** cable
- 90m (295ft) at 1080i, or up to 70m (230ft) at 1080p on shielded **BC-DGKat623** cable
- 100m (330ft) at 1080i or up to 90m (295ft) at 1080p on shielded **BC-DGKat7a23** cable

For optimum range[1] and performance, use Kramer's **BC-DGKat524**, **BC-DGKat623** and **BC-DGKat7a23** cables.

3.1 WP-561/PT-561 HDMI Line Transmitter

The Kramer **WP-561** *HDMI Line Transmitter* is a wall plate module that receives an HDMI signal, encodes it, and transmits it over two CAT 5 cables to the **WP-562** or **PT-562**. The Kramer Pico TOOLS™ **PT-561** *HDMI Line Transmitter* is a standalone device that performs the same functions as the **WP-561**. The **WP-561**/**PT-561** features:

- An HDMI input , and a pair of RJ-45 CAT 5 output connectors
- One power status LED
- Bandwidth up to 1.65Gbps
- EDID PassThru that passes EDID/HDCP signals from source to display
- A bidirectional IR input/output transmitting and receiving IR commands over the CAT 5 cable[2]
- Power Connect™ feeding 5V DC over the CAT 5 cable from the transmitter to the receiver

1 Note that the transmission range depends on the signal resolution, graphics card and display used. The distance using non-Kramer CAT 5, CAT 6 and CAT 7a cables may not reach these ranges

2 Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE

3.2 WP-562/PT-562 HDMI Line Receiver

The Kramer Wall Plate **WP-562** *HDMI Line Receiver* is a wall plate module that receives an encoded signal over two CAT 5 cables transmitted from the **PT-561** or **WP-561**, decodes it, and converts it to an HDMI output. The Kramer Pico TOOLS™ **PT-562** *HDMI Line Receiver* is a standalone device that performs the same functions as the **WP-562**. The **WP-562**/**PT-562** features:

- An HDMI output and a pair of RJ-45 CAT 5 input connectors
- One power status LED
- Bandwidth up to 1.65Gbps
- EDID PassThru that passes EDID signals from source to display
- A bidirectional IR input/output transmitting and receiving IR commands over the CAT 5 cable[1]
- Power Connect™ feeding 5V DC over the CAT 5 cable from transmitter to the receiver[2]

3.3 About the Power Connect™ Feature

The **PT-561/PT-562** and **WP-561/WP-562** have the Power Connect™ feature where the transmitter delivers power and the HDMI signal to the receiver using the same CAT 5 cable.

3.4 Using Twisted Pair Cable

Kramer engineers have developed special twisted pair cables to best match our digital twisted pair products; the Kramer: **BC-DGKat524** (CAT 5 24 AWG), the Kramer: **BC-DGKat623** (CAT 6 23 AWG cable), and the Kramer: **BC-DGKat7a23** (CAT 7a 23 AWG cable). These specially built cables significantly outperform regular CAT 5/CAT 6/CAT 7a cables.

1 Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE

2 The WP-562/PT-562 receives power only by means of the Power Connect feature

3.5 About HDMI

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital[1] audio/video interface, widely supported in the entertainment and home cinema industry. It delivers the highest high-definition image and sound quality. Note that Kramer Electronics Limited is an HDMI Adopter and an HDCP Licensee.

In particular, HDMI[2]:

- Provides a simple[3] interface between any audio/video source, such as a set-top box, DVD player, or A/V receiver and video monitor, such as a digital flat LCD/plasma television (DTV), over a single lengthy[4] cable
- Supports standard, enhanced, high-definition video, and multi-channel digital audio[5] on a single cable
- Transmits all ATSC HDTV standards and supports 8-channel digital audio, with bandwidth to spare to accommodate future enhancements and requirements
- Benefits consumers by providing superior, uncompressed digital video quality via a single cable[6], and user-friendly connector
- Is backward-compatible with DVI (Digital Visual Interface)
- Supports two-way communication between the video source (such as a DVD player) and the digital television, enabling new functionality such as automatic configuration and one-button play

HDMI has the capacity to support existing high-definition video formats (720p, 1080i, and 1080p/60), as well as standard definition formats such as NTSC or PAL.

1 Ensuring an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions

2 HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC

3 With video and multi-channel audio combined into a single cable, the cost, complexity, and confusion of multiple cables currently used in A/V systems is reduced

4 HDMI technology has been designed to use standard copper cable construction at up to 15m

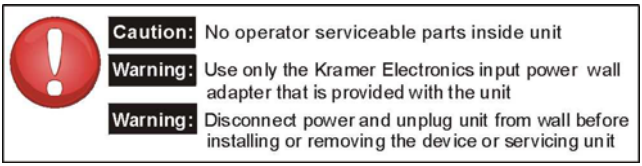
5 HDMI supports multiple audio formats, from standard stereo to multi-channel surround-sound. HDMI has the capacity to support Dolby 5.1 audio and high-resolution audio formats

6 HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner

3.6 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables[1] to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables).
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality and position your Kramer devices away from moisture, excessive sunlight and dust


Caution:
No operator serviceable parts inside unit
Warning:
Use only the Kramer Electronics input power wall adapter that is provided with the unit
Warning:
Disconnect power and unplug unit from wall before installing or removing the device or servicing unit

4 Your WP-561, WP-562 HDMI Transmitter/Receiver Pair

This section describes:

- The **WP-561** *HDMI Line Transmitter* (see section 4.1)
- The **WP-562** *HDMI Line Receiver* (see section 4.2)

1 Available from Kramer Electronics on our Web site at http://www.kramerelectronics.com

4.1 Your WP-561 HDMI Line Transmitter

Figure 1, Figure 2, Figure 3, and Table 1 define the transmitter module.

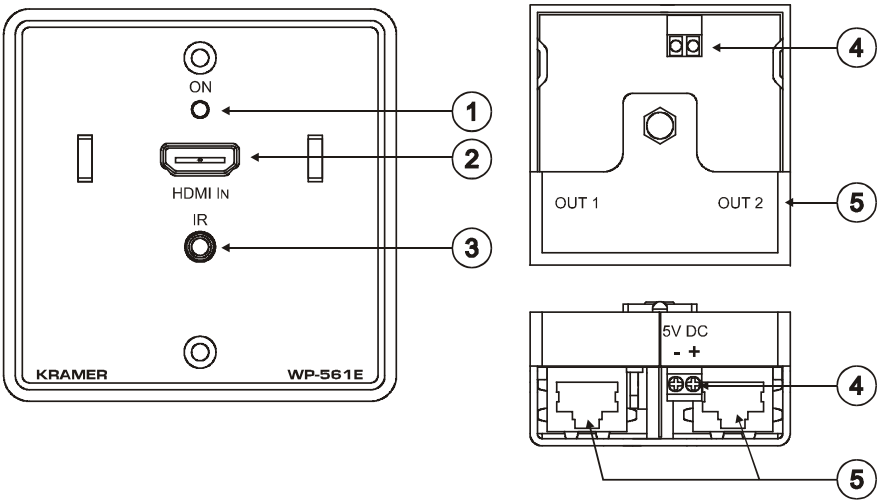


Figure 1: WP-561 HDMI Line Transmitter Belgian/German Model Functions

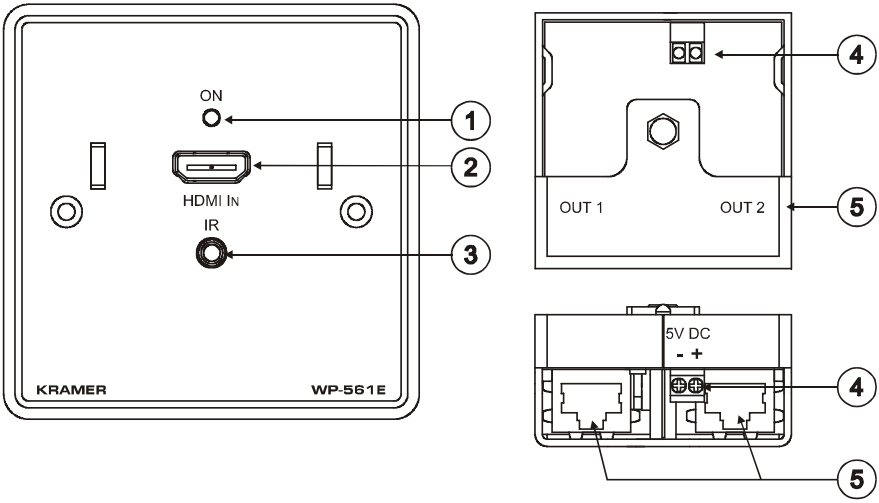


Figure 2: WP-561 HDMI Line Transmitter UK/European Model Functions

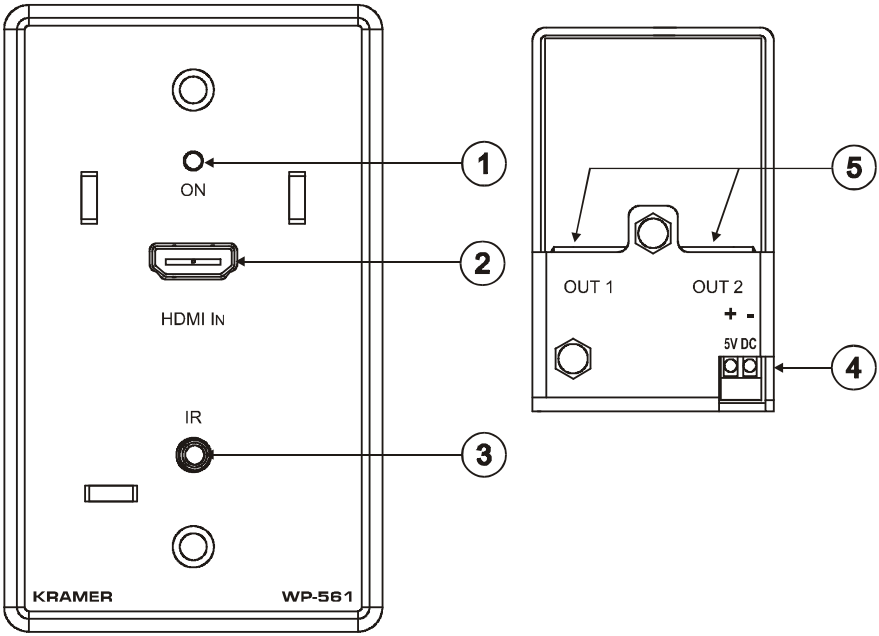


Figure 3: WP-561 HDMI Line Transmitter US Model Functions

Table 1: WP-561 HDMI Line Transmitter Model Functions

#	Feature	Function
1	*ON* LED	Illuminates red when powered on, green when transmitting data
2	*HDMI IN* Connector	Connects to an HDMI source
3	*IR* 3.5mm Mini Jack	Connects to an IR receiver or IR transmitter[1]
4	*5V DC*	+5V DC connector for powering both units (**WP-561** and **WP-562**)
5	*OUT 1* Connector	Connects to the IN 1 RJ-45 connector on the WP-562
	OUT 2 Connector	Connects to the IN 2 RJ-45 connector on the WP-562

1 Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE

4.2 Your WP-562 HDMI Line Receiver

Figure 4, Figure 5, Figure 6, and Table 2 define the receiver module.

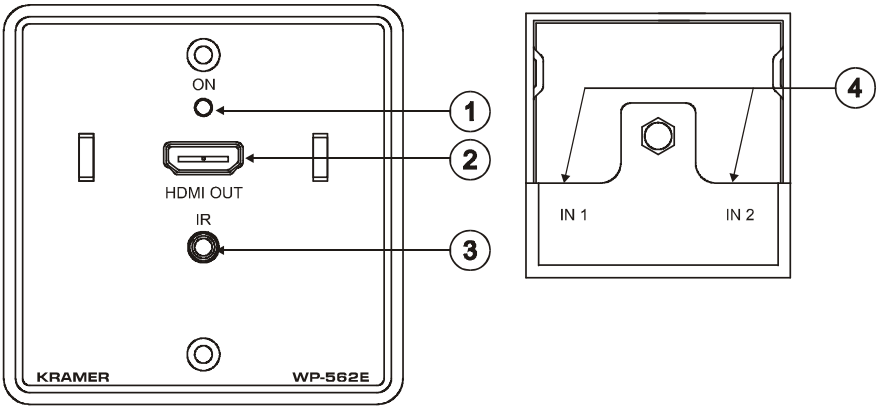


Figure 4: WP-562 HDMI Line Receiver Belgian/German Model Functions

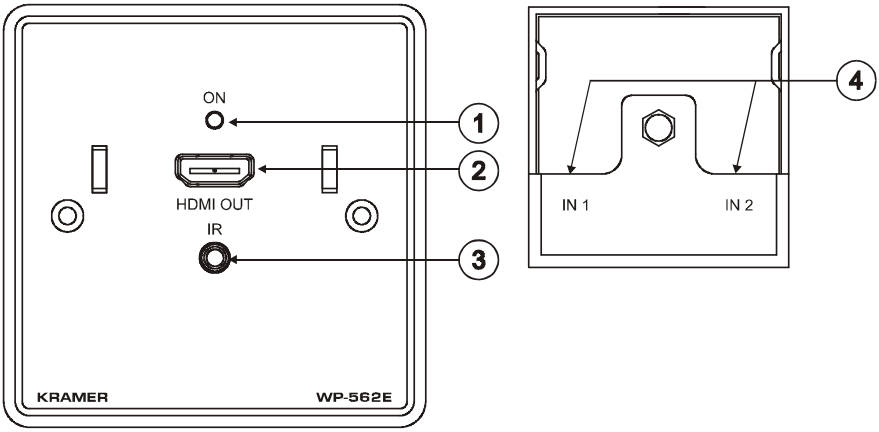


Figure 5: WP-562 HDMI Line Receiver UK/European Model Functions

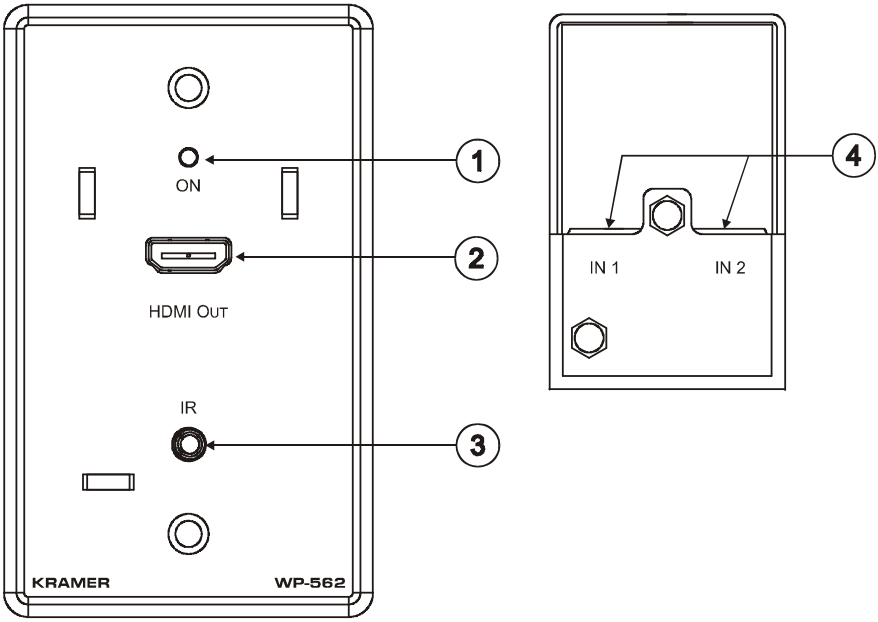


Figure 6: WP-562 HDMI Line Receiver US Model Functions

Table 2: WP-562 HDMI Line Receiver Functions

#	Feature	Function
1	*ON* LED	Illuminates red when powered on, green when transmitting data
2	*HDMI OUT* Connector	Connects to an HDMI acceptor
3	*IR* 3.5mm Mini Jack	Connects to an IR transmitter or IR receiver[1]
4	*IN 1* Connector	Connects to the OUT 1 RJ-45 connector on the **WP-561**
	IN 2 Connector	Connects to the OUT 2 RJ-45 connector on the **WP-561**

1 Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE

5 Connecting the WP-561/WP-562 Transmitter/Receiver Pair

To install the **WP-561** *HDMI Line Transmitter*:

1. Connect the CAT 5 cable 1 RJ-45 connector to the OUT 1 RJ-45 socket[1].
2. Connect the CAT 5 cable 2 RJ-45 connector to the OUT 2 RJ-45 socket[1].
3. Connect the 5V DC power to the terminal block pins[2], taking care that the **polarity is correct**.
4. Insert the **WP-561** directly into the wall box opening, and then mount the front panel securely using the screws.
5. Connect the HDMI source to the *HDMI IN* connector.
6. If required, connect an IR receiver or emitter to the 3.5mm mini jack[3]

To install the **WP-562** *HDMI Line Receiver*:

1. Connect the CAT 5 cable 1 RJ-45 connector to the IN 1 RJ-45 socket[1].
2. Connect the CAT 5 cable 2 RJ-45 connector to the IN 2 RJ-45 socket[1].
3. Insert the **WP-562** directly into the wall box opening, and then mount the front panel securely using the screws.
4. Connect the HDMI acceptor to the *HDMI OUT* connector.
5. If required, connect an IR emitter or receiver to the 3.5mm mini jack[3].

1 See section 7.1

2 Connect the wire labeled "+" to the +5V pin, and the wire labeled "–" to the GND pin

3 See section 7.2

6 Your PT-561, PT-562 HDMI Transmitter/Receiver Pair

This section describes the:

- **PT-561** *HDMI Line Transmitter*, see section 6.1
- **PT-562** *HDMI Line Receiver*, see section 6.2

6.1 Your PT-561 HDMI Line Transmitter

Figure 7 and *Table 3* define the **PT-561**:

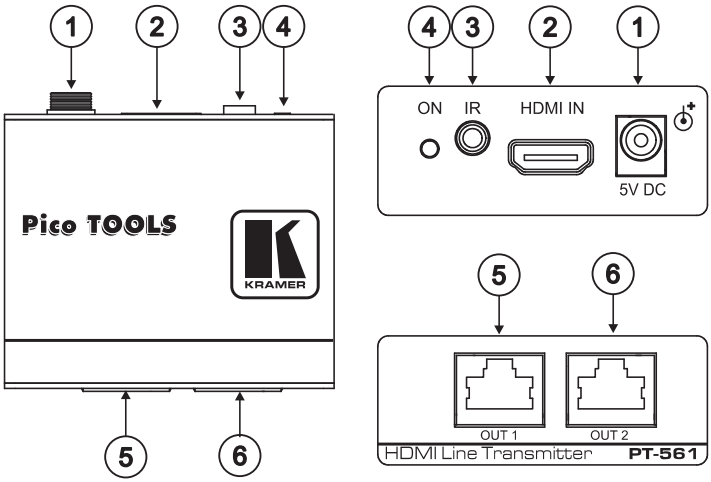


Figure 7: PT-561 HDMI Line Transmitter

Table 3: PT-561 HDMI Line Transmitter Features

#	Feature	Function
1	*5V DC*	+5V DC connector for powering both units (**PT-561** and **PT-562**)
2	*HDMI IN* Connector	Connect to the HDMI source
3	*IR* 3.5mm jack	Connects to an infrared transmitter or receiver[1]
4	*ON* LED	Illuminates red when powered on, green when transmitting data
5	*OUT 1* RJ-45 Connector	Connect to the IN 1 RJ-45 connector on the **PT-562**
6	*OUT 2* RJ-45 Connector	Connect to the IN 2 RJ-45 connector on the **PT-562**

1 Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE

6.2 Your PT-562 HDMI Line Receiver

Figure 8 and Table 4 define the **PT-562**:

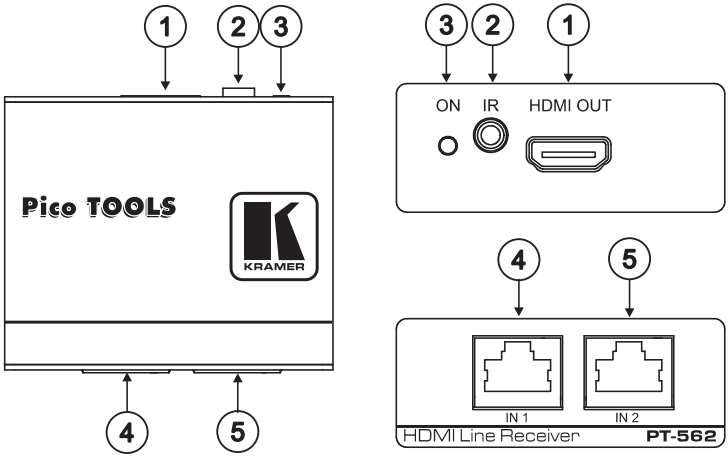


Figure 8: PT-562 HDMI Line Receiver

Table 4: PT-562 HDMI Line Receiver Features

#	Feature	Function
1	*HDMI OUT* Connector	Connect to the HDMI acceptor
2	*IR* 3.5mm jack	Connects to an infrared transmitter or receiver[1]
3	*ON* LED	Illuminates red when powered on, green when transmitting data
4	*IN 1* RJ-45 Connector	Connect to the OUT 1 RJ-45 connector on the **PT-561**
5	*IN 2* RJ-45 Connector	Connect to the OUT 2 RJ-45 connector on the **PT-561**

1 Compatible with a Kramer transmitter and via a Kramer external remote IR receiver: C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE

7 Connecting the PT-561 and PT-562

You can use the **PT-561** *HDMI Line Transmitter* with the **PT-562** *HDMI Line Receiver* to configure an HDMI transmitter/receiver system.

To connect the **PT-561** to the **PT-562**, as illustrated in the example in Figure 9, do the following:

1. Connect the CAT 5 OUT 1 and OUT 2 RJ-45 connectors[1] on the **PT-561** to the CAT 5 IN 1 and IN 2 RJ-45 connectors on the **PT-562**, respectively via two CAT 5 cables (see section 7.1).
2. On the **PT-562**, connect the HDMI OUT connector to an HDMI acceptor (for example, a display).
3. Connect the 5V DC power adapter to the power socket and connect the adapter to the mains electricity to the **PT-561** (not shown in Figure 9).
4. On the **PT-561**, connect an HDMI source (for example, a DVD player) to the HDMI IN connector.
5. If required, connect an IR receiver and IR emitter to the 3.5mm mini jacks on the **PT-561** and the **PT-562**, respectively[2].

1 See section 7.1

2 See section 7.2

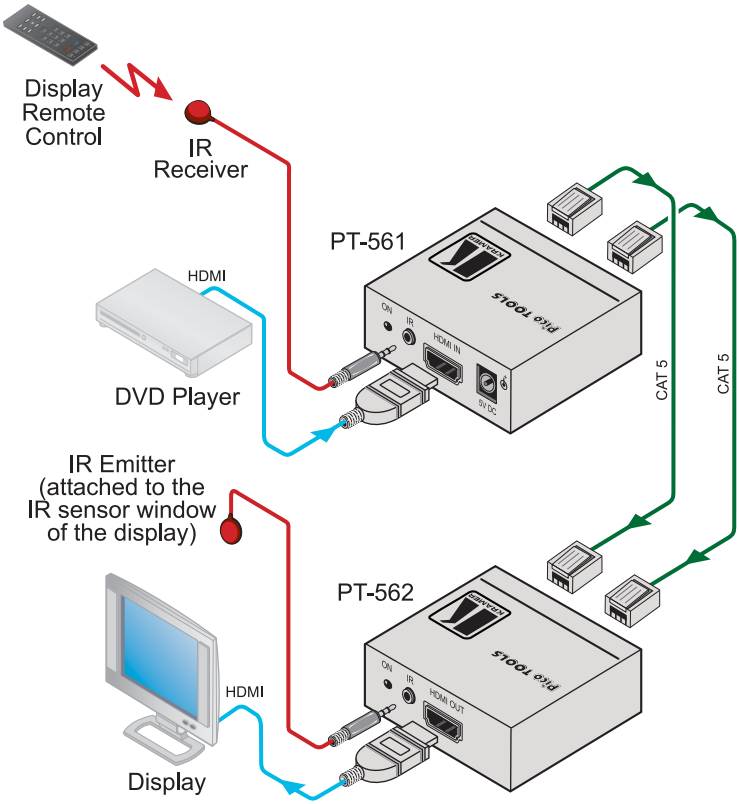


Figure 9: Connecting the PT-561/PT-562 HDMI Line Transmitter/Receiver

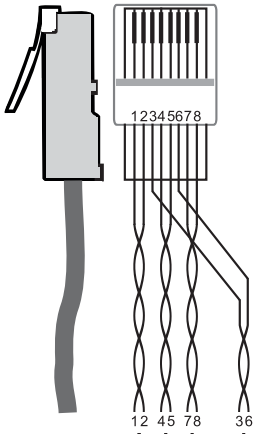
7.1 Wiring the CAT 5 LINE IN/LINE OUT RJ-45 Connectors

Table 5 and Figure 10 define the CAT 5 pinout, using a straight pin-to-pin cable with RJ-45 connectors (note, that the cable Ground shielding must be connected/soldered to the connector shield):

Table 5: CAT 5 PINOUT

EIA /TIA 568A		EIA /TIA 568B	
PIN	**Wire Color**	**PIN**	**Wire Color**
1	Green/White	1	Orange/White
2	Green	2	Orange
3	Orange/White	3	Green/White
4	Blue	4	Blue
5	Blue/White	5	Blue/White
6	Orange	6	Green
7	Brown/White	7	Brown/White
8	Brown	8	Brown
Pair 1	4 and 5	Pair 1	4 and 5
Pair 2	3 and 6	Pair 2	1 and 2
Pair 3	1 and 2	Pair 3	3 and 6
Pair 4	7 and 8	Pair 4	7 and 8

Figure 10: CAT 5 PINOUT



7.2 Connecting an IR Receiver and Emitter

You can control the source or the acceptor by connecting an IR emitter cable and an IR receiver cable to the 3.5mm mini jacks on the transmitter and receiver.

In the example illustrated in Figure 9, the display can be controlled from a distance by transmitting the IR signal from the display remote control via the IR Receiver[1], CAT 5 cables and the IR emitter[2] which is attached to the IR sensor window of the display.

Alternatively, you can control the DVD player by sticking the IR LED of the IR emitter to the IR sensor window of the DVD player, and connecting it to the **PT-561**. The IR Receiver is connected to the **PT-562**, letting you control the DVD player from a distance via the CAT 5 cables.

1 For example, the Kramer C-A35M/IRR IR Receiver

2 For example, the Kramer C-A35M/IRE IR Emitter

8 Technical Specifications

The technical specifications for **WP-561/WP-562** and **PT-561/PT-562** are shown in Table 6.

Table 6: Technical Specifications[1]

	WP-561/PT561	WP-562/PT562
INPUTS:	1 HDMI connector	2 CAT 5 IN on RJ-45 connectors
OUTPUTS:	2 CAT 5 OUT on RJ-45 connectors	1 HDMI connector
IR PORT:	Bidirectional on a 3.5mm mini jack	
BANDWIDTH:	Supports up to 1.65Gbps bandwidth per graphic channel	
COMPLIANCE WITH HDMI STANDARD:	Supports HDMI and HDCP	
POWER SOURCE:	5V DC, 440mA (transmitter and receiver together)	
DIMENSIONS:	PT-561/PT-562: 6.2cm x 5.2cm x 2.4cm (2.4" x 2.1" x 1") W, D, H WP-561/WP-562: 6.9cm x 11.4cm x 2.9cm (2.7" x 4.5" x 1.1") W, D, H	
WEIGHT:	PT-561/PT-562: 0.14kg (0.3lbs) WP-561/WP-562: 0.2kg (0.4lbs)	
ACCESSORIES:	Power supply	
OPTIONS:	19" rack mount adapter, Kramer external remote IR receiver[2,] and Kramer cables[3] BC-DGKat524 (CAT 5 24 AWG), BC-DGKat623 (CAT 6 23 AWG) and BC DGKat7a23 (CAT 7a 23 AWG cable)	

1 Specifications are subject to change without notice

2 C-A35M/IRR or C-A35M/IRE or C-A35M/2IRE

3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for three years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
3. Damage, deterioration or malfunction resulting from:
   i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   ii) Product modification, or failure to follow instructions supplied with the product
   iii) Repair or attempted repair by anyone not authorized by Kramer
   iv) Any shipment of the product (claims must be presented to the carrier)
   v) Removal or installation of the product
   vi) Any other cause, which does not relate to a product defect
   vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC* Rules and Regulations: Part 15: "Radio frequency devices Subpart B Unintentional radiators"

CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

  * FCC and CE approved using STP cable (for twisted pair products)

For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com where updates to this user manual may be found.
We welcome your questions, comments and feedback.

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.

Kramer Electronics, Ltd.
Web site: www.kramerelectronics.com
E-mail: info@kramerel.com
P/N: 2900-000388 REV 8